

the nests of birds with partially webbed feet. We could not wait long enough on the island for the birds to appear, but they were almost certainly the nest burrows of the Crab Plover, which are "generally some five feet long" (Mackworth-Praed & Grant 1957).

#### OSPREY *Pandion haliaetus*

Present on nearly every islet, the larger islets being inhabited by several pairs. Breeding occurs January to April, but their nests—often impressive structures of twigs or other materials, built high on top of a mound or pile of stones—were conspicuous.

#### SOOTY FALCON *Falco concolor*

Present on many of the off-shore islets, apparently in breeding pairs, although we did not locate any nests. They noisily and aggressively drove away gulls, a larger raptor, and the authors, from their territory. Breeding occurs July and August.

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## Scaly-throated Honeyguide *Indicator variegatus* parasitizing Olive Woodpeckers *Dendropicos* *griseocephalus* in Malawi

by Françoise Dowsett-Lemaire

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In the south-central African region, the Scaly-throated Honeyguide *Indicator variegatus* is a highly localized species, found either in tall *Brachystegia* woodland, or in patches of evergreen forest at low and high altitude (see e.g. Benson *et al.* 1971). While resident for 2½ years on the Nyika Plateau (Malawi-Zambia), I occasionally encountered this species in montane forest patches

up to 2300 m. There was no known honeyguide call-site on the Plateau, and certainly none for several kms around my main study area—at 2100–2200 m. Breeding was not therefore suspected until I found the species parasitizing the Olive Woodpecker *Dendropicos griseocephalus*, the only woodpecker common on the Plateau. Details of the study area and of the habitat are given elsewhere, e.g. Dowsett-Lemaire (in press).

#### OBSERVATIONS

Of 12 Olive Woodpeckers' nests found in the 1981 season, 3 were parasitized. They belonged to neighbouring pairs (see Fig. 1 in Dowsett-Lemaire (in press), where the 3 pairs concerned are O, P and R).

##### Nest O

This nest was 12 m up in a dead branch of *Hagenia abyssinica* in an 8-ha forest patch. On 16 September the woodpeckers were carrying food into the cavity to a chick which called with a low, husky voice. Sixteen days later (2 October), a full-grown Scaly-throated Honeyguide was looking out of the entrance. On seeing either parent approaching with food, it would utter a loud "chess-chess-chess-chess . . ." (4–5 calls per second, audible at least 40 m away in the forest). The plumage was more markedly speckled than an adult's—dark grey cap speckled with white spots, yellow-grey breast with black spots—and the bird had a distinctive pale yellow eye-ring. It was obviously ready to fledge, and there was no sign of the family on my next visit (4 October), though a strong wind that day made location of birds difficult.

##### Nest R

This pair of woodpeckers occupied a 2.3-ha forest patch 900 m north of O. Their nest (8 m up in a dead trunk of *Myrica salicifolia*) was found when the foster parents were already feeding, on 17 September. The chick was at a younger stage than O's, however, since it was brooded for 26 out of 60 minutes that day (in warm weather, mid-morning) and it was never heard calling. From observations at nest P (see below), this probably means that it was under 8 days of age when first found; it fledged on 14 October, presumably between 27 and 35 days of age.

On 4 October, the chick was fed 45 times in 8 hours and called briefly when fed, but was usually silent between feeds, except for spells of husky chatter during peaks of feeding activity, between 1000 and 1130, and after 1530. On 12 and 13 October it was looking out of the entrance hole. It once uttered a 4-note slow trill ("foy-foy-foy-foy") of a pitch similar to that of the quavering contact call of the Olive Woodpecker (Dowsett-Lemaire in press) and it was, indeed, answered by the approaching male woodpecker.

On the afternoon of the day it fledged it was located in a thicket some 25 m away from the nest and was rather immobile, unlike young woodpeckers which hop closely behind their parents. It received its last feed at 1728, some 30 minutes before dark. At 1730 both woodpeckers flew to a liana 4 m from the nest and called, as if to attract the young honeyguide to roost there with them (as they do with their own young); but it did not respond and they flew off, after hesitating several minutes near the nest. Eight days later one adult woodpecker was around and called at roost-time, but no honeyguide.

##### Nest P

The main forest patch containing this nest measured 1.3 ha, with a few

smaller clumps around. It was situated between O and R, closest to O (300 m). The nest, excavated about 16 m up in a dead branch of *Polyscias fulva*, was found on 17 August when the woodpeckers were still working on it. On 6 occasions between then and 1 September I spent 3–6 hours watching the nest, usually starting at 0900 or 1000. During that period, on 2 consecutive mornings (26 and 27 August), an adult Scaly-throated Honeyguide was twice seen entering the nest, each time when the woodpeckers were away. It spent only 5 and 8 seconds inside the cavity, in addition to stopping briefly at the entrance on the way in and out. It was not seen between 28 and 31 August, nor on 1 September when incubation started—presumably with the start of egg-laying, since the woodpeckers had been busy working on the nest until then. During 9 hours on that day and again on 13 September there was no sign of the honeyguide. On 15 September at 0900 the nest was unattended. At 0910 both woodpeckers went in, then the female left. She relieved the male at 0916, but only to leave 2 minutes later. At 0926, the honeyguide entered and remained in the nest for 17 seconds; after that it stopped at 2 other unfinished woodpecker holes nearby, clinging to them briefly before flying out of sight. The male woodpecker was back in the nest at 1013.

There was no sign of the honeyguide in a 2-hour visit on 16 September nor on 18 September, when the woodpeckers showed fidgety behaviour, in marked contrast with that at the beginning of incubation. At 0857 on 18 September, 2 minutes after the male woodpecker had left the nest, the honeyguide appeared again. In contrast with previous visits, it behaved as if it wanted to attract attention, hopping around the nest trunk, then clinging to a liana hanging in front of the nest hole, fanning its tail and uttering all the time a loud chatter, reminiscent of the guiding call of the Greater Honeyguide *Indicator indicator*. It then entered the nest for 18 seconds, and came out quietly, bill closed, and disappeared. It was never seen again. Two minutes later the male woodpecker went back into the nest briefly, and for the following hour kept coming and going every few minutes in an agitated way.

The woodpeckers were obviously disturbed and nervous in the period 15–18 September, after which they resumed incubation with zeal and changeovers were quiet. I checked them every other day, usually for 2 hours per visit, until the hatching of a chick in the morning of 6 October—I was fortunate enough to see the male carry a piece of egg-shell and clean it from its bill 4 m from the nest. This gives an incubation period from the honeyguide's last visit of 18 days. Feeding started immediately after, visible beakfuls of food being carried in by the parents.

Judging by lack of calls at first, in contrast with recently-hatched woodpeckers' behaviour, it became apparent that the woodpeckers were feeding a honeyguide chick and this was confirmed after a week when a honeyguide-like husky voice was heard. The woodpeckers' eggs apparently never hatched, though brooded for a period twice as long as the normal  $16 \pm 1$  days (Dowsett-Lemaire in press). Two weeks later, the nest seemed abandoned and the woodpeckers had deserted the patch altogether. Predation seems rather unlikely, as all 13 nests I found containing young woodpeckers succeeded. In 1980 pair P had successfully raised a young woodpecker; I had not found signs of successful breeding in O and R, but did not visit these patches frequently enough to be certain of the outcome of breeding.



*A possible fourth case of parasitism*

In 1980, of the 4 woodpecker nests found, 3 produced young woodpeckers. In the fourth, the parents were feeding and brooding a silent chick when I discovered the nest (mid-October) and deserted it less than a week later. The silence of the nestling, even when fed, points to it probably having been a honeyguide. In 1981, the same nest was re-used and egg-laying occurred in July, at least 2 months earlier than in 1980. Two young woodpeckers were raised successfully. None of the 9 woodpecker pairs known to have laid in July (some from observations of backdated juveniles) was parasitized. Honeyguides are perhaps not able to lay as early as July, and this is also suggested by the netting of an adult in full moult at that time.

## DISCUSSION

The Olive Woodpecker has only once before been mentioned as a host to the Scaly-throated Honeyguide (Sclater & Moreau 1932). Their record, however, is not entirely satisfactory, since Moreau's native collector reported having seen a young Olive Woodpecker next to the young honeyguide. Possibly the "young" woodpecker was confused with one of the adults (the male and juvenile both having a red crown). Alternatively, this represents the only known record of a host's chick surviving after parasitism of the nest by any species of honeyguide (Friedmann 1955, 1968).

Acceptable host records for Scaly-throated Honeyguide (based on the discovery of large nestlings or fledglings fed by the host) are of the Nubian Woodpecker *Campethera nubica*, Golden-tailed Woodpecker *C. abingoni*, Cardinal Woodpecker *Dendropicos fuscescens* and Grey Woodpecker *D. goertae*. Neuby-Varty (*in* Friedmann 1955) also reported an adult Scaly-throated Honeyguide entering a nest of the Black-collared Barbet *Lybius torquatus* and laying an egg—proved by examining the nest before and after the bird's visit.

Records based on eggs alone must be rejected, as the only known egg of the Scaly-throated Honeyguide is reported to be inseparable from those of the Lesser Honeyguide *Indicator minor* (Friedmann 1955). Finally, a record of a nestling Scaly-throated Honeyguide in a nest of the Golden-rumped Tinkerbird *Pogoniulus bilineatus* (van Someren 1956) must be rejected on the basis of the impossibility for a bird as large as *I. variegatus* to enter the tinkerbird's nest, the hole and channel of which is only about 2 cm in diameter. Olive Woodpeckers' holes are just above 4 cm in diameter and the honeyguide I saw filled the entrance hole completely.

The honeyguide nestling period at nest R was a minimum of 4 weeks, but probably nearer 5, given the periods of 37–38 days known for the Lesser Honeyguide (Skead 1951, Ranger 1955). The incubation period at nest P was apparently 18 days; for the Lesser Honeyguide, Ranger (1955) gave a maximum of 12 days and Skead (1951) a maximum of 17 days, but more data are needed.

Young chicks of Greater and Lesser Honeyguides are known to have mandibular hooks (Friedmann 1955) with which the Lesser Honeyguide was proved to kill its hosts' chick (Ranger 1955). Female Greater Honeyguides are also known, not infrequently, to destroy the embryo of the host's eggs by cracking the shell. The behaviour of the Scaly-throated Honeyguide in respect to the host's eggs is unknown, but from observations at nest P, it seems likely that the female honeyguide damaged the host's eggs in some

way, otherwise they should have hatched at about the time she last visited, and the woodpecker young would have been at least 18 days old when the honeyguide's egg hatched on 6 October.

Backdating from the fledging dates at nests O and R, the laying of the honeyguide egg took place in August at each nest (with some days' interval between them) and in September at nest P. The 3 nests were in the neighbourhood of each other, so it is not impossible that they were parasitized by the same individual.

Regrettably, I failed to tape record the low husky voice of young Scaly-throated Honeyguides, but it was certainly very different from the high-pitched twitter or begging "kee-kee-kee . . ." of young Olive Woodpeckers. Vocal mimesis between young Greater Honeyguides and the foster species's begging calls has been occasionally mentioned (Jubb 1966, Fry 1974) but would be best proved with sound spectrograms.

Interactions such as reported by Short & Horne (1979, 1982), mostly between barbets and Greater and Lesser Honeyguides, have never been observed between woodpeckers and honeyguides. On the Nyika I played the tape of the Olive Woodpecker's calls on many occasions without ever attracting a Scaly-throated Honeyguide and the pair of woodpeckers at nest P was never seen to interfere with the honeyguide whenever it visited the nest, although once at least the honeyguide made its presence very noticeable through displays and loud chatter.

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